

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: Edgar et al.	Conf. No.: 5845
Application No.: 10/828,896	Art Unit: 2471
Filed: 20 Apr 2004	Examiner: HOM, SHICK C
Title: CONTROL INTERFACE PROTOCOL FOR TELEPHONE SETS FOR A SATELLITE TELEPHONE SYSTEM	

## BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

MS Appeal Brief - Patents  
Commissioner for Patents  
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Sir:

In response to the Final Office Action dated October 28, 2009 and the Advisory Action dated January 14, 2010, the Appellants on January 27, 2010 requested an Appeal to consider the issues raised or maintained in the Final Office Action. Accordingly, this Brief on Appeal under 37 C.F.R. §41.37 is being filed.

The fees required under § 41.20(b)(2) should be charged to Deposit Account No. 17-0026.

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**I. Real Party in Interest**

The real party in interest in this appeal is QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, California, 92121.

**II. Related Appeals and Interferences**

To the best of Appellants' knowledge, there are no other previous or pending appeals of this Application, or patent interference proceedings, or judicial proceedings which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision of this Appeal.

**III. Status of Claims**

Claims 1-10, 12-14 and 18-24 are on Appeal, with claims 1, 10 and 22 being independent.

1. Claims cancelled: none.
2. Claims withdrawn from consideration but not cancelled: none
3. Claims pending: 1-24.
4. Claims allowed: 11 and 15-17.
5. Claims rejected: 1-10, 12-14 and 18-24.

**IV. Status of Amendments**

No Amendments were made in Appellants' response filed on 12/22/2009. The old Amendments in the 8/05/2009 Amendment were entered and considered by the Examiner as indicated in the 10/28/2009 Final Office Action. Accordingly, there are no un-entered

amendments.

## **V. Summary of the Claimed Subject Matter**

Independent claim 1 is directed to a telephone apparatus (e.g., 104 of FIG. 2, also see Page 5, line 20 to Page 6, line 7), including a transceiver (e.g., 124 of FIG. 2, also see Page 6, line 4 to line 32) that communicates with a central station (e.g., base station 112, also see Page 5, lines 14-32), a plurality of desksets (e.g., 128A, 128B, ..., 118N of FIG. 2 and/or 328A, 328B, ..., 328N of FIG. 3, also see Page 6, lines 4-7 and line 8-14) and an interface bus (e.g., 204 of FIG. 2, also see Page 6, lines 4-7) that permits said desksets to communicate with said transceiver by exchanging packets with the transceiver, each packet including source, destination and error checking information (e.g., see 508 and 516 of FIG. 5 and Page 8, line 21 to Page 9, line 9).

Independent claim 10 is directed to, in a communication system having a plurality of terminals (e.g., 128A, 128B, ..., 118N of FIG. 2 and/or 328A, 328B, ..., 328N of FIG. 3, also see Page 6, lines 4-7 and line 8-14) connected to a common node (e.g., 124 of FIG. 2, also see Page 6, line 4 to line 32) by a digital interface bus (e.g., 204 of FIG. 2, also see Page 6, lines 4-7), a method for handling error control for packets sent to the terminals by the common node, each packet having modulo-sequential sequence numbers (e.g., 808 of FIG. 8, also see Page 9, lines 26-29), including sending a packet (e.g., see 1008 of FIG. 10, also see Page 12, lines 12-20) from the common node to one of the terminals, performing collision checking (e.g., see Page 10, line 26 to Page 11, line 33) on the bus and sending a negative acknowledgment (NAK) (e.g., 1192 of FIG. 11, also see Page 11, line 34 to Page 12, line 13 and/or Page 12, line 21 to Page 12, line 25) from said one of the terminals to the common node when an error or unexpected sequence number is detected in said packet, wherein said NAK includes a sequence number of a

last valid packet received (e.g., see Page 11, line 34 to Page 12, line 13 and/or Page 12, line 21 to Page 12, line 25).

Independent claim 22 is directed to a common node (e.g., 124 of FIG. 2, also see Page 6, line 4 to line 32) in a communication system, the common node connected to a plurality of terminals (e.g., 128A, 128B, ..., 118N of FIG. 2 and/or 328A, 328B, ..., 328N of FIG. 3, also see Page 6, lines 4-7 and line 8-14) by a digital interface bus (e.g., 204 of FIG. 2, also see Page 6, lines 4-7), the common node configured to handle error control for packets sent to the terminals, each packet having modulo-sequential sequence numbers (e.g., 808 of FIG. 8, also see Page 9, lines 26-29), including means for sending a packet (e.g., see 1008 of FIG. 10, also see Page 12, lines 12-20) to one of the terminals, means for performing collision checking (e.g., see Page 10, line 26 to Page 11, line 33) on the bus and means for receiving a negative acknowledgment (NAK) (e.g., 1192 of FIG. 11, also see Page 11, line 34 to Page 12, line 13 and/or Page 12, line 21 to Page 12, line 25) from said one of the terminals if an error or unexpected sequence number is detected in said packet, wherein said NAK includes a sequence number of a last valid packet received (e.g., see Page 11, line 34 to Page 12, line 13 and/or Page 12, line 21 to Page 12, line 25)

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

In the 10/28/2009 Final Rejection, the Office finally rejected:

- (1) Claims 10, 12-14 and 22 under obviousness-type double patenting in view of U.S. Patent No. 6,724,753 based on an allegedly improper terminal disclaimer.
- (2) Claims 1-5, 19-20 and 23-24 under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,938,748 ("Lynch") in view of U.S. Patent No. 5,491,812 ("Pisello").
- (3) Claims 6-9, 18 and 21 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Lynch in view of Pisello in further view of U.S. Patent No. 5,978,578 ("Azarya").

## **VII. Argument**

### **(1) Regarding the Double-Patenting Rejection of Claims 10, 12-14 and 22.**

The Examiner indicated in the 1/14/2010 Advisory Action that:

Applicant's reply has overcome the following rejection(s): The obviousness-type double patenting rejection of claims 10, 12-14 and 22 has been overcome by the disclaimer of 12/22/2009.

As will be appreciated, with the withdrawal of the double-patenting rejection to claims 10, 12-14 and 22, claims 10, 12-14 and 22 are not rejected at this point of prosecution. However, the Examiner has not actually indicated that claims 10, 12-14 and 22 are allowed. While the Examiner's withdrawal of the double-patenting rejection is appreciated by the Appellants, the Examiner is requested to affirmatively indicate that claims 10, 12-14 and 22 are allowed to reduce the issues to be resolved by the Board during this Appeal.

### **(2) Regarding the 35 U.S.C. § 103(a) Rejection of Claims 1-5, 19-20 and 23-24.**

1. The Examiner reads the claimed "plurality of desksets" as recited in independent claim 1 upon a single deskset in Lynch.

Examiner appears to read the claimed "plurality of desksets" as recited in independent claim 1 upon the deskset 113 in Lynch. For example, with regard to the claim language of "an interface bus that permits said desksets to communicate with said transceiver", the Examiner states "Fig. 7 [of Lynch] shows the deskset 113 communicating with by transceiver using the interface bus 315" (e.g., see Page 8 of the 10/28/2009 Final Office Action).

However, in the entirety of Lynch, only two references to deskset 113 are made. Firstly, the deskset 113 is illustrated as a single, wired telephone in FIG. 7 of Lynch. Secondly, Lynch states that "[t]he telecommunications device additionally includes an ISDN physical interface (311) connected to the external ISDN network, to a deskset (113), and to a main bus (315) of the telecommunications device" (e.g., see Col. 9, line 66 to Col. 10, line 2 of Lynch). No further mention of the deskset 113 (or any other deskset) is made in Lynch.

Clearly, the deskset 113 corresponds to a single deskset, and not multiple desksets. A “plurality of desksets” as claimed surely cannot read upon a single deskset. Further, Pisello is cited merely to compensate for Lynch’s failure to disclose “each packet including source, destination and error checking information” as recited in claim 1; not to cure Lynch’s failure to disclose more than one deskset.

The Examiner appears to recognize the deskset 113 shown in Lynch is a single deskset, but the Examiner then attempts to provide a rationale for why it would be obvious to include more desksets. This rationale amounts to “it is well known in the art to connect a plurality of desksets to a telephone network” (e.g., see the 1/14/2009 Advisory action). However, while multiple desksets are, of course, connected to the telephone network, it is not necessarily obvious for Lynch’s particular telephone apparatus to accommodate multiple desksets. The mere acknowledgment that it is well known to have more than one phone connected to a telephone network does not mean that any additional phones would be added to the apparatus shown in Lynch at FIG. 7.

Also, in the Response to Arguments section of the 10/28/2009 Final Office Action, the Examiner clarified his position by indicating that Lynch is directed to “mechanisms for serial communications interfaces” (Emphasis is Examiner’s) which the Examiner alleges clearly suggests “more than one deskset” and that “it would not be possible to communication with only one deskset connected to the system” (e.g., see Page 2 of the 10/28.2009 Office Action). This is incorrect for a number of reasons.

Firstly, FIG. 7 of Lynch clearly shows multiple serial ports (i.e., serial ports 302, 307, 319) with a single deskset 113 attached to the system. Not only is it possible for a single deskset for Lynch’s system to have a single deskset, but that is the only embodiment actually disclosed by Lynch.

Secondly, the Examiner's indication that "it would not be possible to communication with only one deskset connected to the system" is incorrect because the deskset 113 could be connected to some remote deskset through the telephone line. This does not require additional desksets to be included within the actual telephone apparatus shown in FIG. 7 of Lynch. The Examiner's confusion appears to be in that belief that the deskset 113 is used for internal communication with the host 100 or some other local desksets, whereas the clear inference from Lynch is that the deskset 113 is used to communicate with remote telephones via the telephone company over the ISDN line.

Accordingly, Lynch neither discloses nor suggests having a "plurality" of desksets attached to the telecommunications device shown in FIG. 7, which means that Lynch cannot be used to show a "telephone apparatus" including "a plurality of desksets" as recited in claim 1.

2. The deskset 113 of Lynch does not appear to communicate with the serial port 302; rather, the serial port 302 is simply used by the host computer 100 to exchange information on an ISDN line.

The Examiner reads the claimed "transceiver" upon the serial port 302 in Lynch, and reads the claimed "plurality of desksets" upon the deskset 113 in Lynch (e.g., see Page 6 of the 4/8/2009 Office Action and Page 8 of the 10/28/2009 Final Office Action). Independent claim 1 recites "an interface bus that permits said desksets to communicate with said transceiver by exchanging packets with the transceiver". The Appellants do not necessarily believe this limitation is taught within Lynch as applied by the Examiner, as will now be explained.

In Lynch, a telecommunications device (e.g., which includes elements 301 through 317 in the central 'box' of FIG. 7 of Lynch) can communicate with a telephone company over an ISDN line, and this telecommunications device permits either the host computer 100 (e.g., a workstation computer) or a deskset 113 to access the ISDN line. The host computer 100 connects to the ISDN line through the serial port 302 as shown in FIG. 7, and through the serial



port 302 the host computer 100 connects to the ISDN physical interface 311 and then to the ISDN line. The deskset 113, however, connects directly to the ISDN physical interface 311 and then to the ISDN line, and its data has no need to be routed through the serial port 302. The only reason the deskset 113 would have to contact the serial port 302 would appear to be to exchange information to/from the host computer 100, and nothing in Lynch suggests that the deskset would ever exchange information with the host computer 100. Rather, both the host computer 100 and deskset 113 are configured to access the ISDN line; not communicate with each other (e.g., why would the deskset 113, shown as a wired telephone in FIG. 7 of Lynch, call the subscriber's own workstation computer?)

Further, Pisello is cited merely to compensate for Lynch's failure to disclose "each packet including source, destination and error checking information" as recited in claim 1 (e.g., see Pages 9-10 of the 10/28/2009 Final Office Action); not to cure Lynch's failure to disclose an interface through which the deskset 113 and serial port 302 can communicate.

For this reason, the Appellants respectfully submit that the combination of Lynch and Pisello cannot disclose or suggest "an interface bus that permits said desksets to communicate with said transceiver by exchanging packets with the transceiver" as recited in independent claim 1, because nothing in Lynch suggests that the deskset 113 ever communicates with the serial port 302 and/or the host computer 100.

3. There is no apparent rationale for combining Pisello's Ethernet-routing protocols for routing over a serial connection.

Pisello is directed to a mechanism for converting data packets from an Ethernet format into a SCSI format, and vice versa. On Page 9-10 of the 10/28/2009 Final Office Action, the Examiner primarily cites to FIGS. 3-4 of Pisello to compensate for Lynch's admitted failure to

disclose “each packet including source, destination and error checking information” as recited in independent claim 1.

With respect to FIGS. 3 and 4 of Pisello, Pisello states “FIGS. 3, 4 and 5 illustrate the coding of information received and transmitted over the Ethernet network” (e.g., see Col. 3, lines 45-46 of Pisello). Clearly, FIGS. 3 and 4 show the format for a data packet that is configured in accordance with the Ethernet format.

By contrast, the serial port 302 of Lynch communicates via a serial-format, and not an Ethernet format. The Examiner has provided no rationale for why the serial format used by the serial port 302 should be modified to incorporate header fields specific to Ethernet packets. For example, source and/or destination fields are important parameters in Ethernet routing, but appear to have little practical use in a point-to-point serial connection as shown in Lynch.

The Examiner indicates that the “motivation for defining fields in the packet to include source, destination and error checking information ... being it provides more efficiency in the design of the system” (e.g., see Page 11 of the 10/28/2009 Final Office Action). In the 12/22/2009 Amendment, the Appellants explained how increasing the size of a packet-header decreases efficiency, because the ratio of header-portion to data payload-portion is increased.

The Examiner was receptive to this argument, but indicated that while adding header information to the packet “would reduce efficiency at the serial interface level; clearly it would increase efficiency at the packet network interface level” (e.g., see the 1/14/2009 Advisory Action). Even assuming for the moment that the Examiner’s weighing of the relative importance of the above-noted efficiencies and inefficiencies with the suggested Ethernet-for-serial substitution is correct (which the Appellants respectfully submit has not be sufficiently demonstrated in any case), the Appellants submit that it makes much more sense for the deskset 113 to maintain its serial connection to the host 100. The host 100 could then, if necessary, packetize the serial data within an Ethernet packet and could transmit this packet over the ISDN

line. Thus, using Ethernet-protocols in Lynch does not necessarily mean that the specific connection between the host 100 and the deskset 113 would need to be Ethernet, because that could simply be handled by whatever entity is actually sending the data to the network.

Further, the exchange of serial information is fundamentally different than the exchange of Ethernet information. The routing protocols are very different, and the Examiner should not automatically assume that a feature that works well in an Ethernet setting would work well in a serial setting without citing to documentary evidence that indicates such an incorporation would be beneficial.

Further, the serial port 302 exchanges data to/from only the host computer 100. If packets are sent to the host computer 100, including a destination field is rather pointless since the host computer 100 is the only destination. Conversely, if packets are sent from the host computer 100 to the serial port 302, including a source field is rather pointless since the host computer 100 is the only source. Thus, these fields do not appear to be necessary in Lynch's configuration. Two devices connected by a single dedicated cable do not need to identify themselves or the target device on communications over the cable — their respective identities would simply be assumed.

Also, the Appellants note that 'packets' are not sent over the serial interface shown in Lynch. Packets are exchanged over the ISDN line, but that is not a serial connection. Further, the Examiner's suggestion the Ethernet-protocol standard would be used in place of a serial interface because the Ethernet protocol is "well-known" is confusing given that the serial-interface is also well-known (*in fact, the serial-interface predates Ethernet protocols and could be argued to be even more well-known*), and no rationale is provided by the Examiner for substituting the serial-interface with an Ethernet interface. The Examiner's indication that more efficiency is provided with Ethernet "since the system uses standard and known method of interfacing with packets" appears to ignore the fact that serial interfaces used by Lynch are also

well-known. How could the fact that Ethernet is well-known be relevant to substituting one well-known protocol for another well-known protocol?

In summation, if the Examiner truly believes that the serial ports 302, 317 and/or 319 would be permit more efficient communication between the host-computer 100 and deskset 113, the Appellants do not believe that the Examiner's position has been properly articulated, as the obvious conclusion to reach would surely be adding extra information to a data flow that already appears to work would only decrease the efficiency of the data flow. The Examiner's suggestion that this inefficiency would be countered by some higher-level efficiencies at the network are speculative at best, and fail to recognize that the host 100 could packetize the serial data on its own without requiring the deskset 113 to provide data in Ethernet-format instead of the serial-format shown in Lynch.

4. Regarding claims 23 and 24, the Examiner's Use of Official Notice does not appear particularly relevant to the associated claim limitation, and is insufficient to show that the Official Notice would result in a modification to Lynch so as to achieve the claim invention.

Claim 23 recites "wherein the transceiver is configured to communicate with the central station over a wireless communications link". The Examiner indicates claim 23 is obvious because "examiner takes official notice that wireless communication link including a base station is well-known in the art" (e.g., see Page 9 of the 10/28/2009 Final Office Action). Respectfully, the Examiner's Official Notice is irrelevant to this claim. The Examiner reads the "central station" on the host-computer 100 in Lynch. The host computer 100 is a workstation computer; not a base station. Furthermore, the host computer 100 has a wired serial link to the telephone apparatus in FIG. 7 of Lynch. Thus, the fact that wireless base stations are well-known is irreverent to the claims given that Examiner's present interpretation of reading the "central station" on a workstation computer.

Claim 24 recites “wherein the central station corresponds to a base station within an access network that is configured to provide wireless communications services to each of the plurality of desksets through the transceiver”. Again, the host computer 100 is clearly not a base station at an access network. Rather, the host computer 100 interfaces with a remote network essentially as a subscriber device. The fact that wireless base stations are well-known does not allow the Examiner to assert that any manner in which wireless base stations can be claimed is automatically obvious, especially when such an implication contradicts the Examiner’s own interpretation of the claims.

6. Summary of Arguments.

In view of any or all of the reasons given above, the Appellants respectfully submit that independent claim 1 is allowable over the combination of Lynch in view of Pisello. As such, claims 2-5 and 19-20, dependent upon independent claim 1, are likewise allowable over Lynch in view of Pisello at least for the reasons given above with respect to the independent claim.

The Appellants respectfully request that the Board withdraw this art grounds of rejection.

**(3) Regarding the 35 U.S.C. § 103(a) Rejection of Claims 6-9, 18 and 21.**

The Examiner cites to Azarya to compensate for the failure of Lynch and Pisello to disclose a number of limitations included within dependent claims 6-9, 18 and 21 (e.g., see Page 11 of the 10/28/2009 Final Office Action). Azarya is directed to an openbus system for control automation networks. A review of Azarya indicates that Azarya is insufficient to cure the suggestion and disclosure deficiencies of Lynch and Pisello as discussed above with respect to independent claim 1; namely, Azarya provides no rationale for substituting multiple desksets for the single deskset 113 of Lynch, no rationale for applying Ethernet protocols to a serial connection, and so on.

As such, claims 6-9, 18 and 21, dependent upon independent claim 1, are likewise allowable over Lynch in view of Pisello at least for the reasons given above with respect to the independent claim.

The Appellants respectfully request that the Board withdraw this art grounds of rejection.

#### **VIII. CLAIMS**

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

#### **IX. EVIDENCE**

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Office is being submitted.

#### **X. RELATED PROCEEDINGS**

No related proceedings are referenced in Section II, above.

**XI. CONCLUSION**

The Appellants respectfully submit that claims 1-24 are patentable over the applied art and that all of the rejections and objections of record should be reversed.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: 3/25/2010

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Attachment(s):

## **APPENDIX A: CLAIMS**

1. (Previously Presented) A telephone apparatus, comprising:  
a transceiver that communicates with a central station;  
a plurality of desksets; and  
an interface bus that permits said desksets to communicate with said transceiver by exchanging packets with the transceiver, each packet including source, destination and error checking information.
2. (Previously Presented) The apparatus of claim 1, each packet comprising:  
an address (ADDR) byte that includes source and destination addresses of the packet;  
a command (CMD) byte;  
an argument (ARG); and  
a block check character (BCC) for error checking.
3. (Original) The apparatus of claim 2, wherein said BCC is produced by a longitudinal parity check.
4. (Original) The apparatus of claim 2, wherein said BCC is produced by a cyclic redundancy check.
5. (Original) The apparatus of claim 2, wherein each packet further comprises a start of header (SOH) byte that indicates the start of the packet.
6. (Original) The apparatus of claim 1, wherein said interface bus comprises a pair of conductors.
7. (Original) The apparatus of claim 1, wherein said interface bus comprises an unshielded twisted pair.
8. (Original) The apparatus of claim 1, wherein said interface bus comprises an EIA-485 interface.



9. (Original) The apparatus of claim 1, wherein a media access layer of said interface bus is carrier sense multiple access with collision detect.

10. (Previously Presented) In a communication system having a plurality of terminals connected to a common node by a digital interface bus, a method for handling error control for packets sent to the terminals by the common node, each packet having modulo-sequential sequence numbers, comprising the steps of:

    sending a packet from the common node to one of the terminals;

    performing collision checking on the bus; and

    sending a negative acknowledgment (NAK) from said one of the terminals to the common node when an error or unexpected sequence number is detected in said packet, wherein said NAK includes a sequence number of a last valid packet received.

11. (Previously Presented) The method of claim 10, further comprising the step of re-sending any lost packets from the common node to said one of the terminals when the unexpected sequence number is detected.

12. (Original) The method of claim 10, further comprising the step of sending a reboot command from the common node to said one of the terminals when the number of missed packets exceeds a predetermined threshold.

13. (Original) The method of claim 10, further comprising the step of sending a reboot command from the common node to said one of the terminals when a NAK is received at the common node from said one of the terminals.

14. (Previously Presented) The method of claim 10, further comprising the steps of:  
    determining that a current packet is new when a sequence number in the current packet is one greater than a sequence number in a previous packet;

    determining that the current packet is repeated when the sequence number in the current packet equals the sequence number in the previous packet;

determining that the current packet is repeated when the sequence number in the current packet is N less than the sequence number in the previous packet, where N is a predetermined threshold; and

detecting a bad sequence number otherwise.

15. (Original) The method of claim 10, further comprising the step of detecting an error based on a block check character in said one of the packets.

16. (Original) The method of claim 10, further comprising the step of detecting an error when a predetermined period elapses between receipt of successive characters in said one of the packets.

17. (Previously Presented) The method of claim 10, wherein the collision checking is based on a different pre-assigned time-out period for each terminal.

18. (Previously Presented) The telephone apparatus of claim 1, wherein each deskset has a different pre-assigned time-out period.

19. (Previously Presented) The telephone apparatus of claim 1, wherein source information included in each packet identifies a given deskset among that the plurality of desksets that is sending the packet.

20. (Previously Presented) The telephone apparatus of claim 1, wherein each of the plurality of desksets exchanging packets with the transceiver is configured to send data to the transceiver in a different manner from each other deskset based on an associated address of the deskset.

21. (Previously Presented) The telephone apparatus of claim 20, wherein the associated address of each deskset defines a different time-out period related to access of the interface bus by a corresponding deskset.

22. (Previously Presented) A common node in a communication system, the common node connected to a plurality of terminals by a digital interface bus, the common node configured to handle error control for packets sent to the terminals, each packet having modulo-sequential sequence numbers, comprising:

means for sending a packet to one of the terminals;

means for performing collision checking on the bus; and

means for receiving a negative acknowledgment (NAK) from said one of the terminals if an error or unexpected sequence number is detected in said packet, wherein said NAK includes a sequence number of a last valid packet received.

23. (Previously Presented) The telephone apparatus of claim 1, wherein the transceiver is configured to communicate with the central station over a wireless communications link.

24. (Previously Presented) The telephone apparatus of claim 23, wherein the central station corresponds to a base station within an access network that is configured to provide wireless communications services to each of the plurality of desksets through the transceiver.

**APPENDIX B: EVIDENCE**

(None)

**APPENDIX C: RELATED PROCEEDINGS**

(None)